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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/812,716

03/20/2001

Eyal Assa

70844

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12/15/2004

FITCH EVEN TABIN AND FLANNERY  
120 SOUTH LA SALLE STREET  
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CHICAGO, IL 60603-3406

EXAMINER

KHUONG, LEE T

ART UNIT

PAPER NUMBER

2665

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/812,716	<b>Applicant(s)</b> ASSA ET AL. <span style="float: right;">✓</span>	
	<b>Examiner</b> Lee Khuong	<b>Art Unit</b> 2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 March 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 10 and 11 is/are rejected.
- 7) ☐ Claim(s) 3-9, 12-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/14/2002</u> | 6) <input type="checkbox"/> Other: ____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
3. Claims 1-2 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aimoto (US 6,570,876) in view of Kline (US 5,793,747).

Regarding claims 1, Aimoto teaches a Packet Switch And Switching Method For Switching Variable Length Packets.

In Fig. 1 discloses a traffic scheduling for multiple queues Q1-Qn in Fig. 1 with a service contract A that has a guarantee of bandwidth (*having an agreed bandwidth requirement*) and a

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service contract B that has no guarantee of bandwidth (*having no agreed bandwidth requirement*), col. 8 lines 3-17.

The system and method comprising the steps of:

*assigning a weight to each queue* (a priority as a weight is assigned to each queue of queue group  $Q_1-Q_n$  in Fig. 6, col. 10 lines 16-18 and col. 12 lines 35-46) *having an agreed bandwidth requirement* (wherein each queue has its respective bandwidth requirement according to its contracted bandwidth in Fig. 4 and Fig. 5, col. 6 lines 11-26), *the weight being determined in dependence on the bandwidth requirement* (the assigned priority is dependent to the guarantee of bandwidth of each queue, col. 6 lines 40-58);

*grouping the queues* (the queues  $Q_{i0}-Q_{in}$  are grouped under the index "i" Fig. 6, col. 9 lines 60-61) *having no agreed bandwidth requirement into a group,  $Q^*$* , ( $Q_{i0}-Q_{i3}$  are grouped for service contract B, Fig. 6, col. 8 lines 65-67 and col. 10 lines 16-18) and *assigning a weight to the group* (priorities as a weight are assigned to queue group  $Q_{i0}-Q_{i3}$  in Fig. 4, col. 8 lines 65-67 and col. 9 lines 1-11);

*scheduling the queues* (a scheduler 82-1 Fig. 10) *for transmission on the link in dependence on their assigned weight* (the scheduler reads out packets according to the priorities of the queues, col. 13, lines 15-25), *wherein if a scheduled queue has no traffic to transmit another queue is scheduled* (if no packet in the queue, the next queue is read out of the queue group in step 112 of Fig. 8), *the group  $Q^*$  being scheduled after the other queues* (the queues of contract B is scheduled after the queues of contract A have all been transmitted out, col. 12, lines 1-13).

Aimoto does not teach expressly *scheduling the transmitting queues on a last transmission time for the respective queue*.

Kline teaches scheduling transmitting queues with a real time scheduler 200, Fig. 2 in accordance with the respective queue, col. 5 lines 51-67 and col. 6 lines 1-12.

Aimoto and Kline are analogous art because they are from a similar problem solving area of queue scheduling effectively.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the queue scheduling of Kline with Aimoto.

The motivation for doing so would have been to provide more efficient control on scheduling of the transmitting queues (Kline, col. 1, lines 51-53)

Therefore, it would have been obvious to combine Kline with Aimoto to obtain the invention as specified in claim 1.

Regarding claim 2, in Aimoto, the ratio of a contract A to the available link bandwidth is taught in col. 8 lines 3-12. Consequently, assigning the priority as a weight for contract A's service is dependent on the ratio.

Regarding *a queue with a low weight being scheduled for transmission before a queue with a higher weight*, Aimoto teaches processing queues in descending priorities order instead of ascending order. However, processing queues in descending or ascending priorities order does not make a difference if the end purpose is to read out queues with guarantee of bandwidth service contract (*agreed bandwidth requirement*) first and queues without guarantee of bandwidth service contract (*no agreed bandwidth requirement*) after, see col. 13, lines 15-25. Therefore, Aimoto is considered teaching the claimed invention of *a queue with a low weight being scheduled for transmission before a queue with a higher weight*.

Regarding claim 10, this claim has similar limitations of claim 1. Therefore, it is rejected under Aimoto in view of Kline for the same reasons set forth in the rejection of claim 1.

Regarding claim 11, this claim has similar limitations of claim 2. Therefore, it is rejected under Aimoto for the same reasons set forth in the rejection of claim 2.

Regarding claim 19, Aimoto teaches the priority control unit 5 (*traffic controller*) that has a memory 83 (*storage means*) in which it queued packets for transmission, Fig.1, col. 5 lines 22-29 and col. 6 lines 4-26 and the priority control unit 5 schedules transmitting traffic in accordance to requirements of the traffic, col. 6 lines 7-10.

The configuration of Fig. 2 in Kline teaches a counter 220 (indicator) in combination with a real time task scheduler 206 scheduling traffic transmitting out of the next queue that bases on the indicating counter 220 Fig. 2, col. 5 lines 51-67 and col. 6 lines 1-12.

Regarding claim 20, Aimoto teaches a memory 72 (*the data structure*) and a second memory 83 to store a copy of the data structure and a scheduler in Fig. 10 that will recalculate a transmission schedule in step 114 of Fig. 8, col. 10 lines 38-62.

Regarding claim 21, the traffic control system of Aimoto is capable of having Application Specific integrated circuit.

Regarding claim 22, the traffic control system of Aimoto is capable of having a field programmable gate array.

Regarding claim 23, this claim has similar limitations of claim 1. Therefore, it is rejected under Aimoto in view of Kline for the same reasons set forth in the rejection of claim 1.

Regarding claim 24, this claim has similar limitations of claim 1. Therefore, it is rejected under Aimoto in view of Kline for the same reasons set forth in the rejection of claim 1.

***Allowable Subject Matter***

4. Claims 3-9 and 12-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Aetresh (US 6,067,301); Lyles (US 6,038,217); Doshi et al. (US 6,529,499); Li et al. (US 5,757,771) are cited to show a Traffic Control Method And System, which is considered pertinent to the claimed invention.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Khuong whose telephone number is 571-272-3157. The examiner can normally be reached on 9AM - 5PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Lee T. Khuong  
Examiner  
Art Unit 2665

**DUCHO**  
**PRIMARY EXAMINER**

  
12-3-04